

Entry Approved
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Reply Under 37 C.F.R. § 1.116
Expedited Procedure - 3616

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Thomas W. Melcher
Application No. : 10/577,692
Date of Filing : July 7, 2008
Title : VEHICLE LEAN AND ALIGNMENT CONTROL
SYSTEM
Confirmation No. : 3736
Examiner : Culbreth, Eric D.
TC/Art Unit : 3616
USPTO Customer No. : 84278
Attorney Docket No. : 2207.0004

RESPONSE UNDER 37 C.F.R. §1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Final Office Action dated November 24, 2010, Applicant respectfully requests the Examiner to reconsider and further examine the Application in view of the amendments and comments as set forth below.

Amendments to the Specification: None.

Amendments to the Drawings: None.

Amendments to the Claims: Begin at page 2.

Remarks: Begin at page 8.

Amendment to the claims:

1-25 (Cancelled)

26. (Previously presented) A vehicle suspension, comprising:
a lower arm having an inboard end and an outboard end;
an upper control arm having an inboard end and an outboard end, the upper control arm pivotally connected to the lower arm;
an actuator comprising an actuation mechanism and at least one actuator arm;
the actuator arm pivotally connected to the upper control arm;
the actuator is motively connected to the upper control arm by the actuator arm;
a cammed cylinder in fluid communication with the actuation mechanism that at least partially controls the actuator arm; and
the actuation mechanism connected to the actuator arm, wherein the actuation mechanism includes a mechanical shock absorber and an actuator line connects the cammed cylinder to the mechanical shock absorber.

27. (Previously presented) The vehicle suspension of claim 26, further comprising the mechanical shock absorber pivotally connected to the actuator arm.

28. (Previously presented) The vehicle suspension of claim 27, further comprising:
a cam member supported on the lower arm;
the cammed cylinder having a piston motively coupled to the cam member; and

the actuator line connecting the cammed cylinder to the mechanical shock absorber.

29. (Previously presented) The vehicle suspension of claim 26, further comprising a mechanical link pivotally connected to the actuator arm.

30. (Previously presented) The vehicle suspension of claim 26, further comprising a hub assembly pivotally connected to the outboard ends of the lower arm and the upper control arm, wherein pivotal connections of the actuator arm, the lower arm, the upper control arm, and the hub assembly generally form a parallelogram.

31. (Previously presented) The vehicle suspension of claim 26, further comprising:

an actuator pump coupled to the actuator line;

wherein:

the cammed cylinder has a piston motively coupled to the actuator line;

one of the cammed cylinder and the piston is supported on one of the lower arm and the upper control arm; and

the other of the piston and the cammed cylinder is motively connected to the actuator arm.

32. (Cancelled)

33. (Previously presented) A frame and suspension for a vehicle, comprising:

a frame;

a lower arm having an inboard end coupled to the frame and an outboard end;

an upper control arm having an inboard end and an outboard end, the upper control arm pivotally connected to the lower arm;

an actuator comprising an actuation mechanism and at least one actuator arm;

the actuator arm pivotally connected to the upper control arm;

the actuation mechanism connected to the actuator arm;

a cammed cylinder having a piston in fluid communication with the actuation mechanism that at least partially controls the actuator arm; and

the actuator movably connected to the upper control arm by the actuator arm.

34. (Previously presented) The frame and suspension for a vehicle of claim 33, wherein the actuation mechanism comprises a mechanical shock absorber and an actuator line that connects the cammed cylinder to the mechanical shock absorber.

35. (Previously presented) The frame and suspension for a vehicle of claim 33, further comprising a mechanical shock absorber pivotally connected to the actuator arm.

36. (Previously presented) The frame and suspension for a vehicle of claim 35, wherein the mechanical shock absorber is pivotally connected to the frame.

37. (Previously presented) The frame and suspension for a vehicle of claim 35, further comprising:

a cam member supported on the lower arm;
the cammed cylinder having a piston motively coupled to the cam member; and
an actuator line connecting the cammed cylinder to the mechanical shock absorber.

38. (Previously presented) The frame and suspension for a vehicle of claim 37, wherein the cammed cylinder is supported on the frame.

39. (Previously presented) The frame and suspension for a vehicle of claim 33, further comprising a mechanical link pivotally connected to the actuator arm.

40. (Previously presented) The frame and suspension for a vehicle of claim 39, wherein the mechanical link is pivotally connected to the frame.

41. (Previously presented) The frame and suspension for a vehicle of claim 33, further comprising a hub assembly pivotally connected to the outboard ends of the lower arm and the upper control arm, wherein pivotal connections of the actuator arm, the lower arm, the upper control arm, and the hub assembly generally form a parallelogram.

42. (Previously presented) The frame and suspension for a vehicle of claim 41, further comprising a mechanical link pivotally connected to each of the actuator arm and the frame, wherein the parallelogram is a first parallelogram and pivotal connections between the mechanical link, the frame, the actuator

arm, and the lower arm form a second parallelogram.

43. (Previously presented) The frame and suspension for a vehicle of claim 33, further comprising:

an actuator pump coupled to an actuator feed line;

wherein:

the actuator comprises the cammed cylinder having the piston motively coupled to the actuator feed line;

one of the cammed cylinder and the piston is supported on one of the lower arm and the upper control arm; and

the other of the piston and the cammed cylinder is motively connected to the actuator arm.

44. (Previously presented) The frame and suspension for a vehicle of claim 33, wherein:

the frame is a vehicle frame;

the suspension comprises the lower arm, the upper control arm, the actuator arm, and the actuator as a first arm assembly; and

wherein the suspension further comprises at least a second arm assembly comprising a second lower arm, a second upper control arm, a second actuator arm, and a second actuator.

45. (Previously presented) The frame and suspension for a vehicle of claim 44, wherein each arm assembly includes a cammed cylinder fluidly connected to at least one mechanical shock absorber.

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46. (Currently amended) The frame and suspension for a vehicle of claim 45, wherein the cammed cylinders have pistons that move therein to provide a greater or lesser ~~effective~~ volume of a fluid for each shock absorber, the ~~effective~~ volume varying with an expansion or contraction of the fluid.

47. (Currently amended) The frame and suspension for a vehicle of claim 46, wherein the ~~effective~~ volume is decreased as the respective arm assembly is rotated through an arc toward the frame.

48. (Currently amended) The frame and suspension for a vehicle of claim 46, wherein the ~~effective~~ volume is decreased as the respective arm assembly is rotated through an arc away from the frame.

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REMARKS

Drawings

Replacement drawings as approved by the Examiner are attached with this response. Specifically, Applicant attaches replacement FIG. 2A, FIG. 3A, FIG. 3B, FIG. 4A, FIG. 4G, FIG. 4H, FIG. 7 and FIG. 8. No new matter has been added and Applicant respectfully requests that the new drawings be made part of the prosecution history and publication.

35 U.S.C. § 112 Rejection

The Office Action rejects claims 46-48 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In a telephone conversation with Examiner Eric Culbreth on December 6, 2010, the Examiner indicated that removal of the word "effective" from claims 46-48 would allow the claims to overcome the 112 rejection, and place the claims in condition for allowance. Applicant has amended the claims accordingly and believes the claims are now in condition for allowance.

Allowable Subject Matter

Applicant acknowledges the allowance of claims 26-31 and 33-45.

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Conclusion

Applicant believes that all information and requirements for the application have been provided to the USPTO. If there are matters that can be discussed by telephone to further the prosecution of the Application, Applicant invites the Examiner to call the undersigned attorney at the Examiner's convenience.

The Commissioner is hereby authorized to charge any fees due with this filing to USPTO Account No. **50-4747**.

Respectfully submitted,

December 15, 2010

By: Robert D. Atkins
Robert D. Atkins
Reg. No. 34,288

Address all correspondence to:

Robert D. Atkins

605 W. Knox Road

Suite 104

Tempe, AZ 85284

Telephone: 602.748.4408

Facsimile: 602.748.4414

E-mail: main@plgaz.com

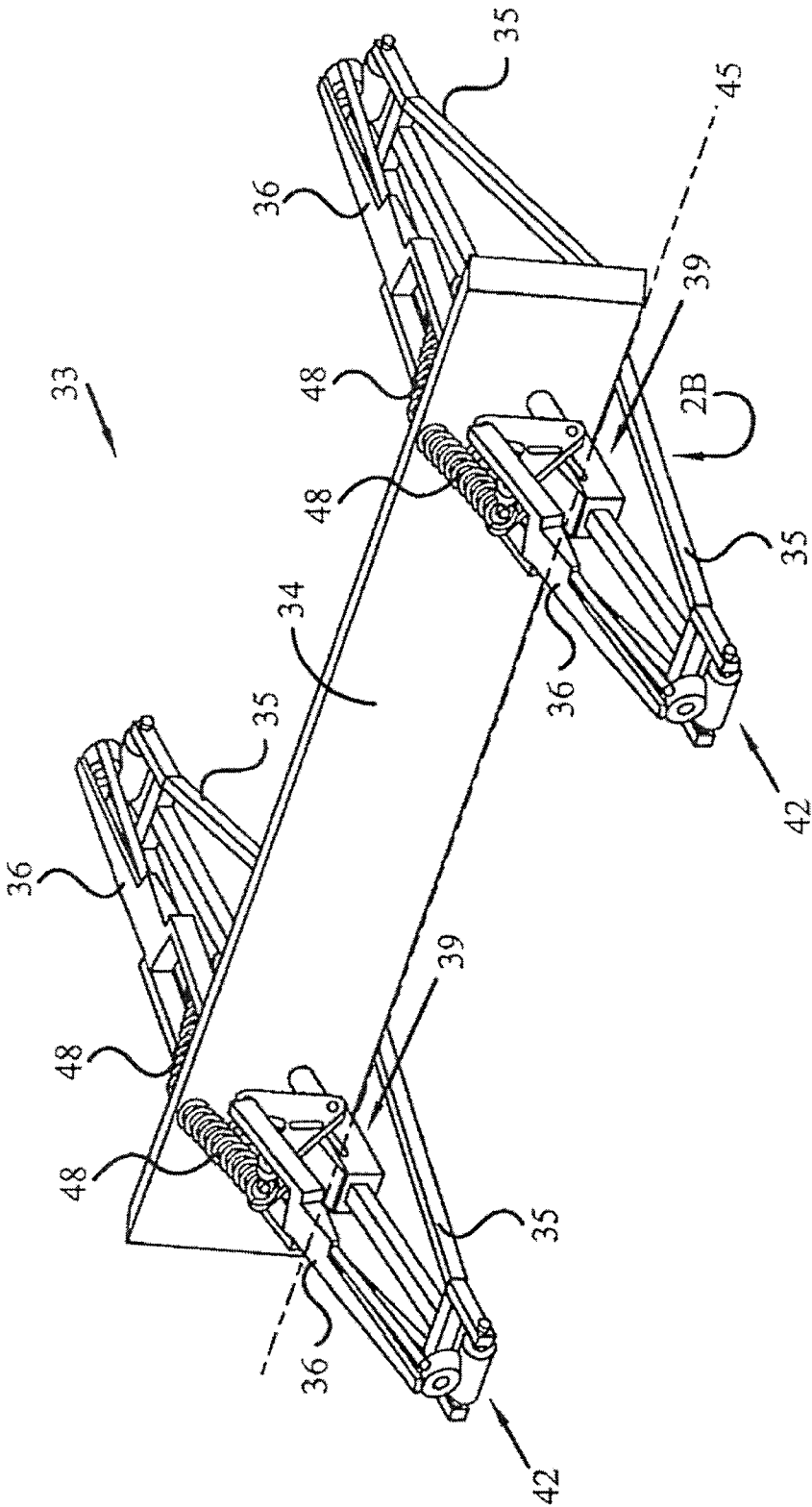


FIG. 2A

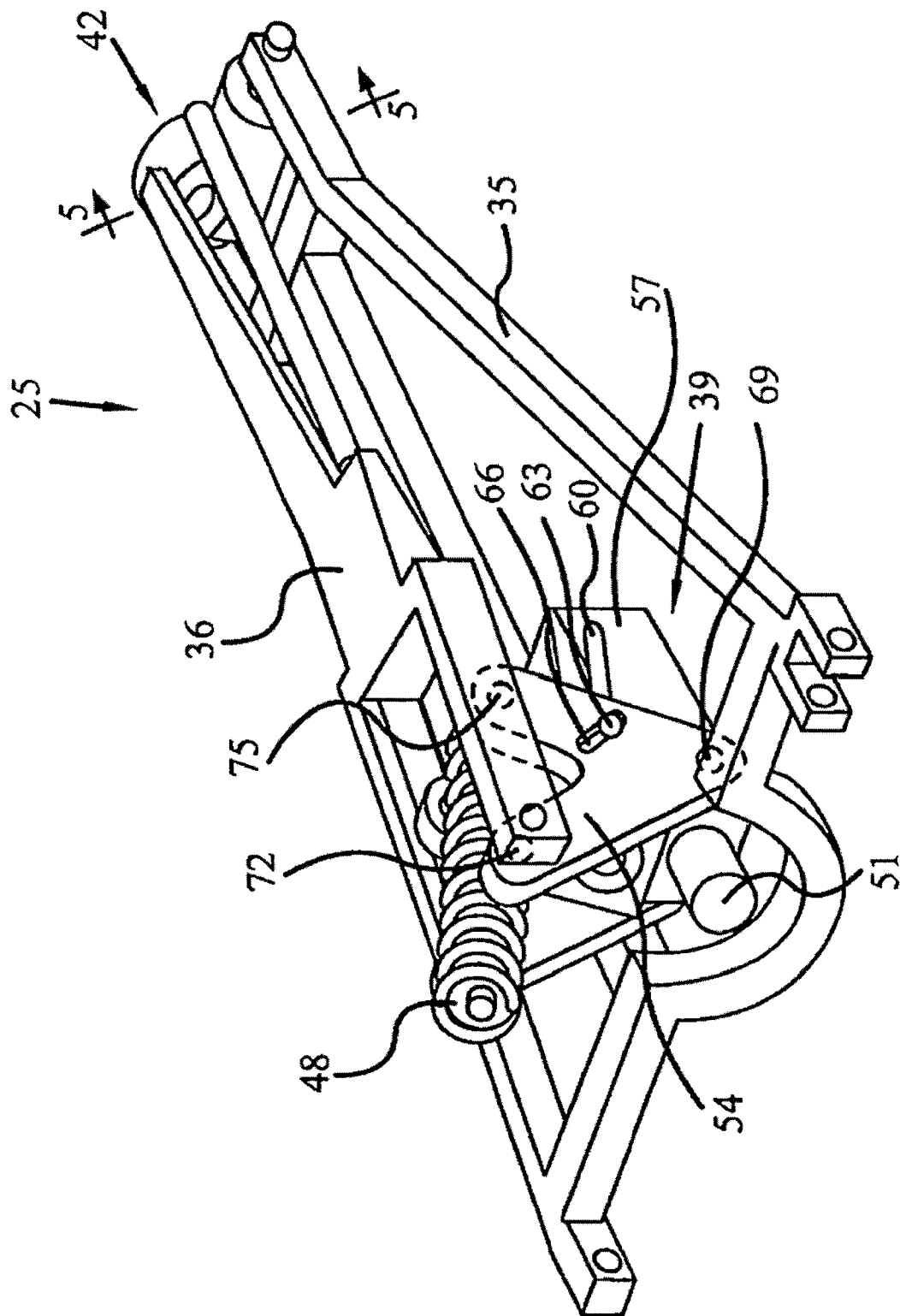


FIG. 3A

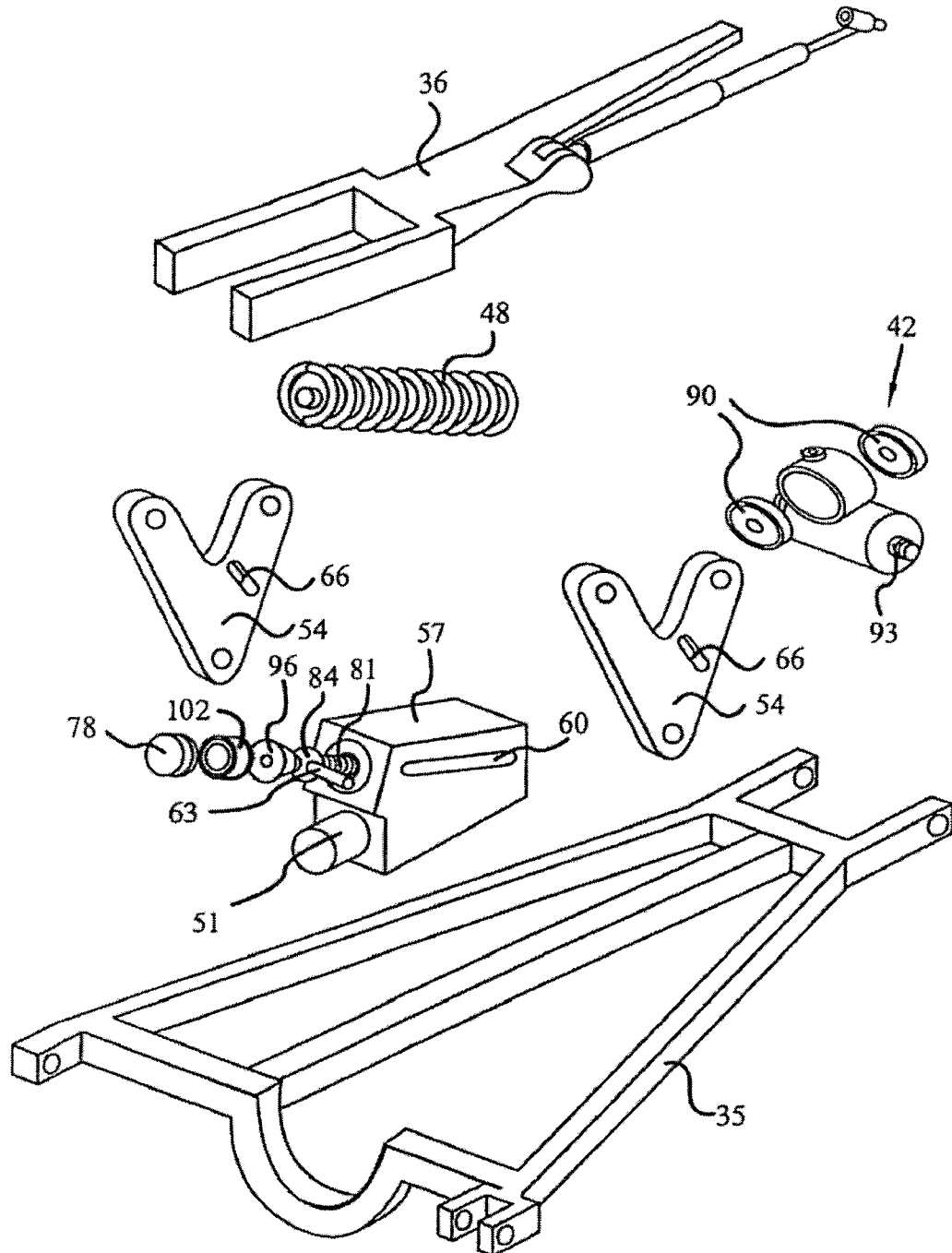


FIG. 3B

REPLACEMENT DRAWINGS

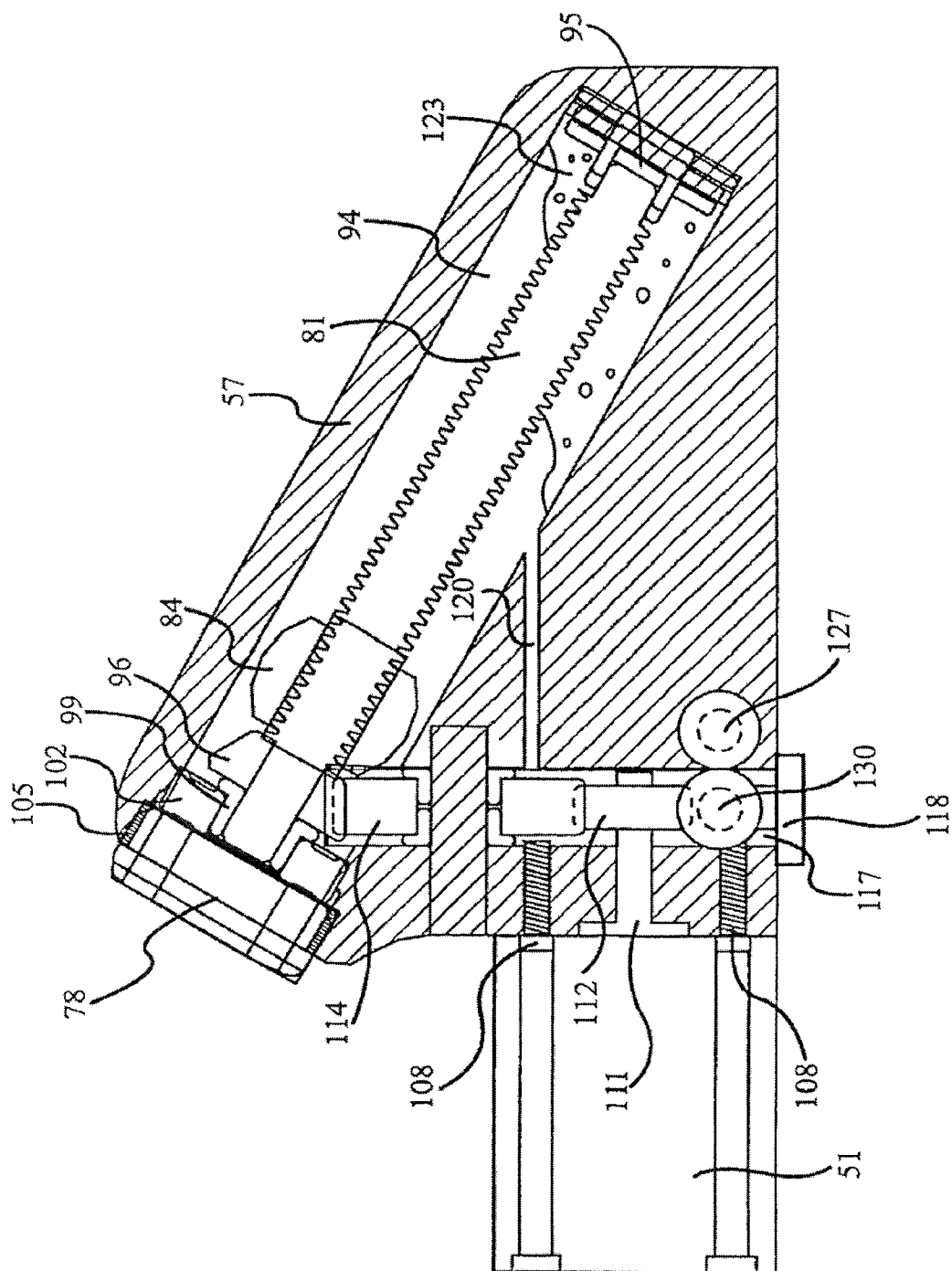


FIG. 4A



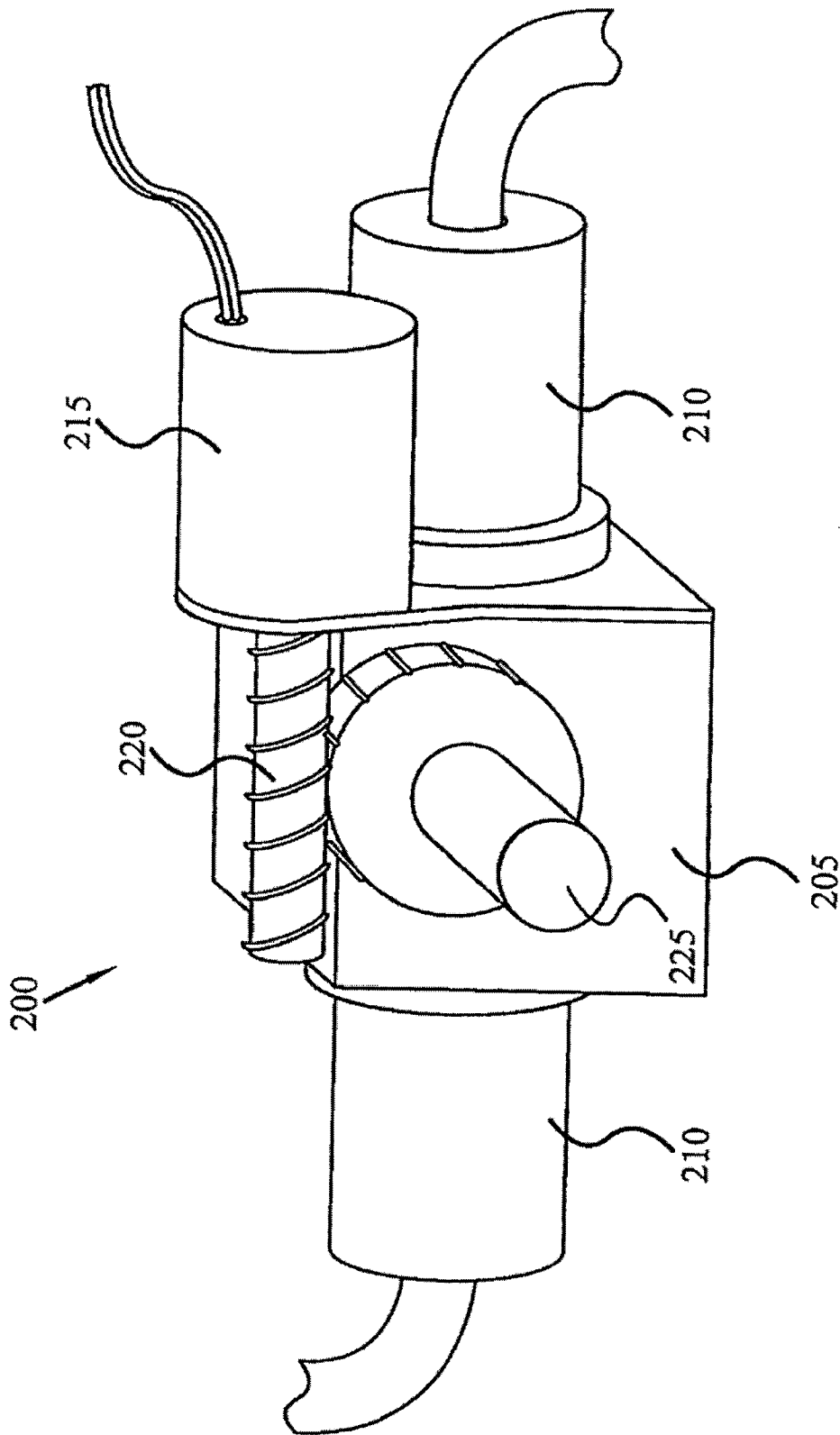


FIG. 7

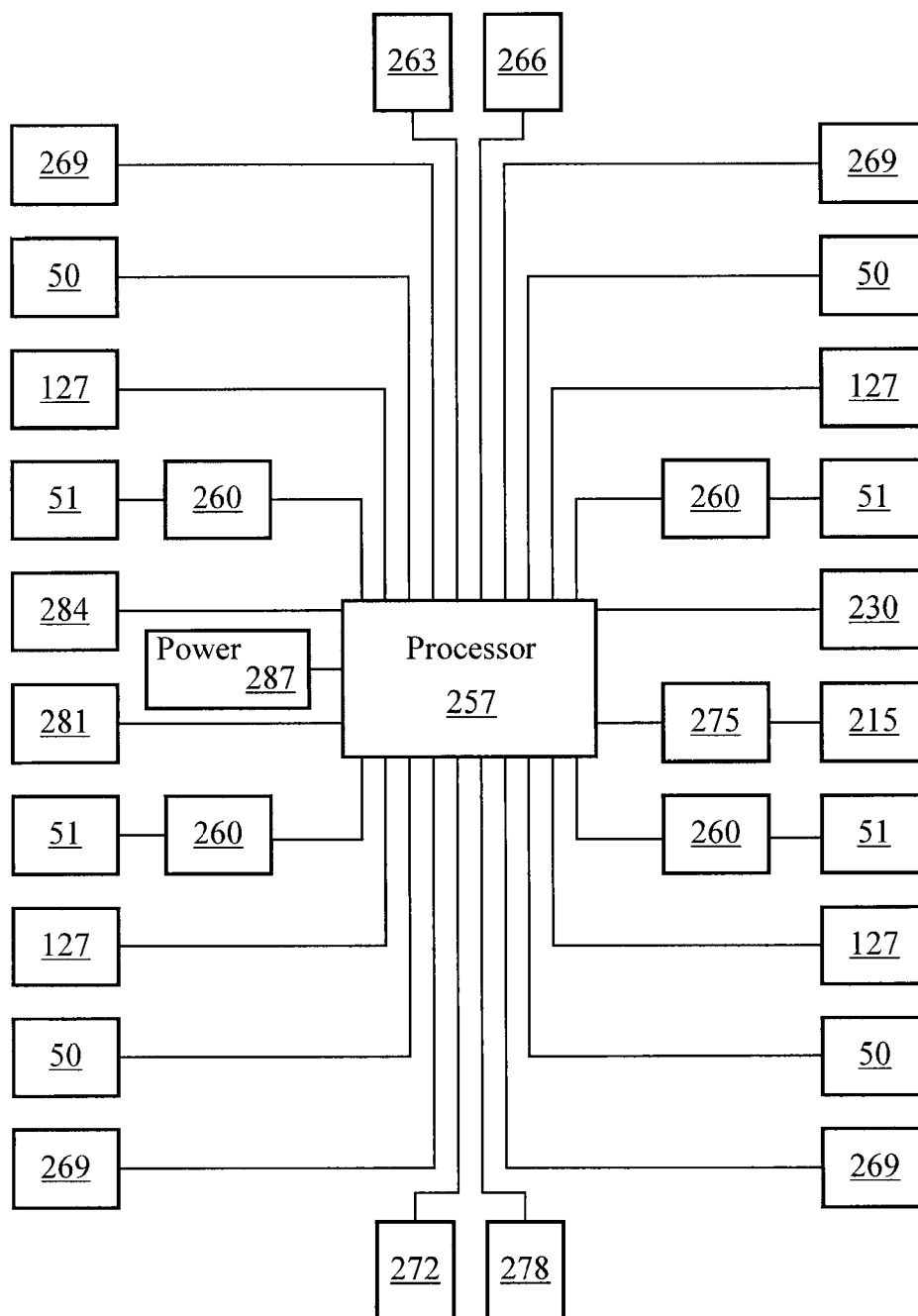


FIG. 8